

PLEASE CHECK WWW.MOLEX.COM FOR LATEST PART INFORMATION

Part Number:

0512811694

Status:

Active

Overview:

Description:

0.50mm (.020") Pitch FFC/FPC Connector, SMT, Right Angle, Non-ZIF, Dual Contact Style, 1.20mm (.047") Mated Height, 16 Circuits, Lead-free, Gold (Au) Plating

General

|                                |                                |
|--------------------------------|--------------------------------|
| Product Family                 | FFC/FPC Connectors             |
| Series                         | 51281                          |
| Overview                       | ffc_fpc_smt                    |
| Product Name                   | N/A                            |
| Physical                       |                                |
| Circuits (Loaded)              | 16                             |
| Color - Resin                  | Natural                        |
| Contact Position               | Dual                           |
| Durability (mating cycles max) | 20                             |
| Entry Angle                    | 90° Angle                      |
| Mated Height (in)              | 0.047 In                       |
| Mated Height (mm)              | 1.20 mm                        |
| Material - Metal               | Phosphor Bronze                |
| Material - Plating Mating      | Gold                           |
| Material - Plating Termination | Tin                            |
| Material - Resin               | High Temperature Thermoplastic |
| Number of Rows                 | 1                              |
| Orientation                    | Right Angle                    |
| PC Tail Length (in)            | 0.020 In                       |
| PC Tail Length (mm)            | 0.50 mm                        |
| PCB Locator                    | No                             |
| PCB Retention                  | Yes                            |
| Packaging Type                 | Embossed Tape on Reel          |
| Pitch - Mating Interface (in)  | 0.020 In                       |
| Pitch - Mating Interface (mm)  | 0.50 mm                        |
| Plating min: Mating (µin)      | 4                              |
| Plating min: Mating (µm)       | 0.1                            |
| Plating min: Termination (µin) | 40                             |
| Plating min: Termination (µm)  | 1                              |
| Polarized to PCB               | Yes                            |
| Stackable                      | No                             |
| Surface Mount Compatible (SMC) | N/A                            |
| Temperature Range - Operating  | -20°C to +85°C                 |
| Termination Interface: Style   | Surface Mount                  |
| Wire/Cable Type                | FFC/FPC                        |

Electrical

|                               |      |
|-------------------------------|------|
| Current - Maximum per Contact | 0.5A |
| Voltage - Maximum             | 50V  |

Material Info

Reference - Drawing Numbers

|                         |                                                           |
|-------------------------|-----------------------------------------------------------|
| Packaging Specification | SPK-51281-001                                             |
| Product Specification   | PS-51281-003, RPS-51281-016, RPS-51281-017, RPS-51281-018 |
| Sales Drawing           | SD-51281-011, SD-51281-012                                |

EU RoHS

ELV and RoHS

Compliant

REACH SVHC

Not Reviewed

Halogen-Free

Status

China RoHS



Not Reviewed

Need more information on product environmental compliance?

Email [productcompliance@molex.com](mailto:productcompliance@molex.com)

For a multiple part number RoHS Certificate of Compliance, [click here](#)

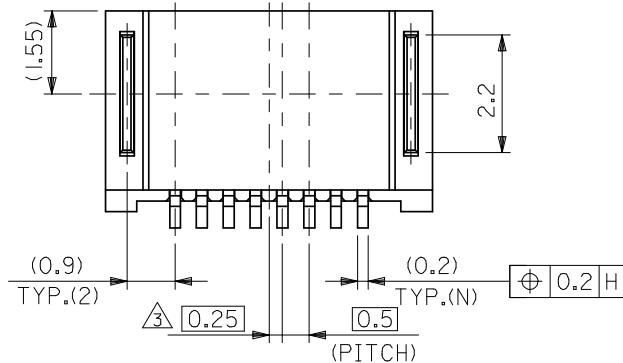
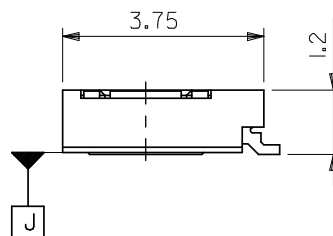
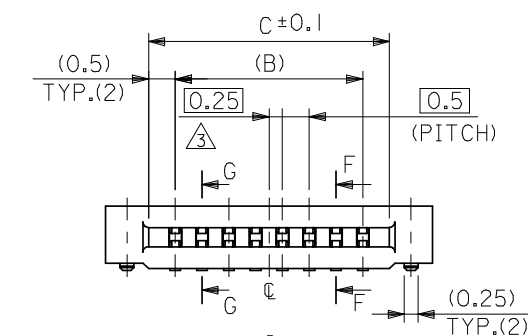
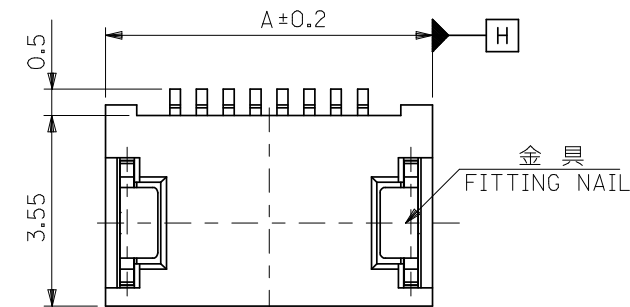
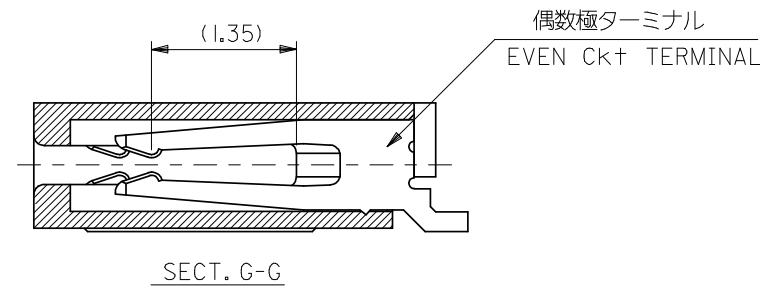
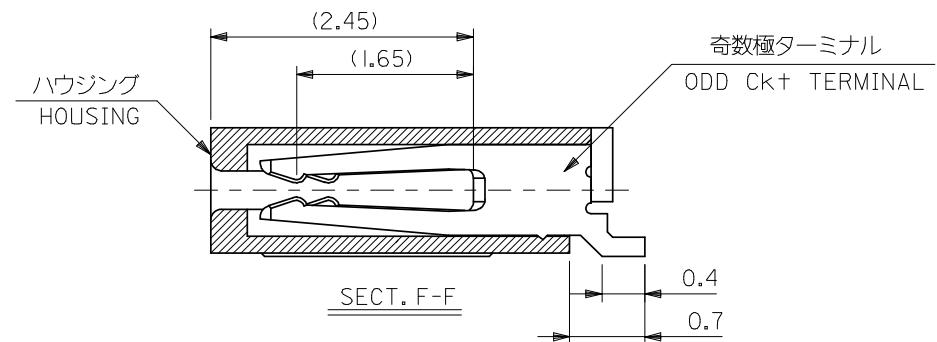
Please visit the [Contact Us](#) section for any non-product compliance questions.

Search Parts in this Series

51281Series

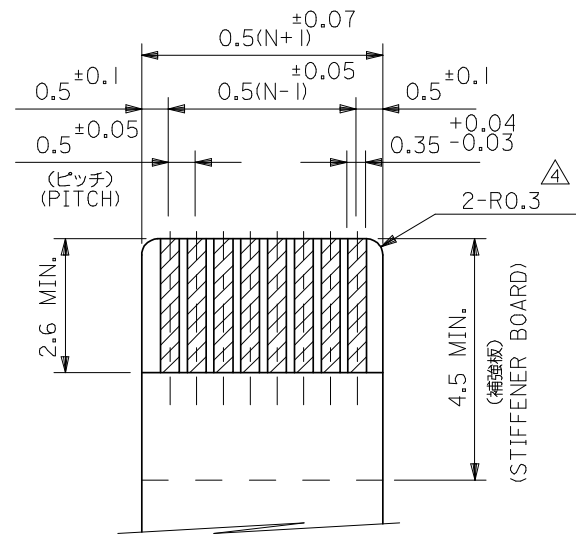
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|      |      |      |                                   |              |         |
|------|------|------|-----------------------------------|--------------|---------|
| 13.5 | 12.5 | 15.1 | 51281-2694                        | 51281-2640   | 26      |
| 12.5 | 11.5 | 14.1 | 51281-2494                        | 51281-2440   | 24      |
| 11.5 | 10.5 | 13.1 | 51281-2294                        | 51281-2240   | 22      |
| 10.5 | 9.5  | 12.1 | 51281-2094                        | 51281-2040   | 20      |
| 9.5  | 8.5  | 11.1 | 51281-1894                        | 51281-1840   | 18      |
| 8.5  | 7.5  | 10.1 | 51281-1694                        | 51281-1640   | 16      |
| 7.5  | 6.5  | 9.1  | 51281-1494                        | 51281-1440   | 14      |
| 6.5  | 5.5  | 8.1  | 51281-1294                        | 51281-1240   | 12      |
| 5.5  | 4.5  | 7.1  | 51281-1094                        | 51281-1040   | 10      |
| 5.0  | 4.0  | 6.6  | 51281-0994                        | 51281-0940   | 9       |
| 4.5  | 3.5  | 6.1  | 51281-0894                        | 51281-0840   | 8       |
| 3.5  | 2.5  | 5.1  | 51281-0694                        | 51281-0640   | 6       |
| 3.0  | 2.0  | 4.6  | 51281-0594                        | 51281-0540   | 5       |
| C    | B    | A    | EMBOSSED TAPE<br>ORDER No. オーダー番号 | MATERIAL NO. | CIRCUIT |

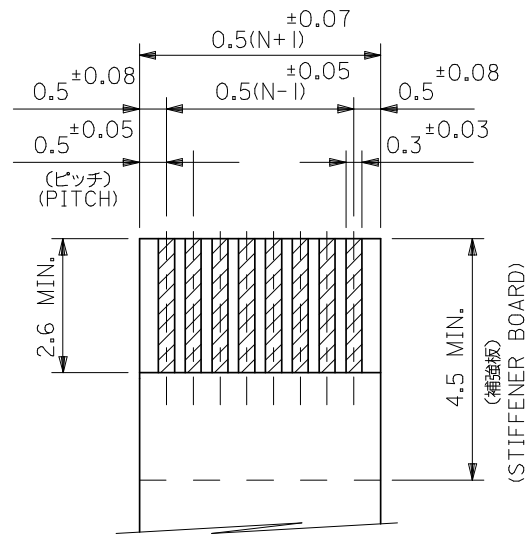
|                                                                                                                       |             |                                                            |                          |                 |                                                                      |                                                                                                                                  |              |                           |           |        |  |  |
|-----------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------|--------------------------|-----------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------|-----------|--------|--|--|
| REVISED<br>EC NO: J2008-4308<br>2008/06/27<br>DRWN:WABEI<br>2008/06/30<br>CHKD:THARUYAMA<br>APPR:NUKITA<br>2008/06/30 | DESCRIPTION | GENERAL TOLERANCES<br>(UNLESS SPECIFIED)                   |                          | DIMENSION STYLE |                                                                      | SCALE                                                                                                                            | DESIGN UNITS | MODEL NO.                 |           |        |  |  |
|                                                                                                                       |             |                                                            |                          | MM ONLY         |                                                                      | ---                                                                                                                              | METRIC       | THIRD ANGLE<br>PROJECTION |           |        |  |  |
|                                                                                                                       |             | DRAWN BY                                                   |                          | DATE            | TITLE<br>0.5 FPC CONN NON-ZIF<br>HSG ASSY (HGT=1.2MM)<br>-LEAD FREE- |                                                                                                                                  |              |                           |           |        |  |  |
|                                                                                                                       |             | KENSUZUKI                                                  |                          | 2004/10/19      |                                                                      |                                                                                                                                  |              |                           |           |        |  |  |
|                                                                                                                       |             | CHECKED BY                                                 |                          | DATE            |                                                                      |                                                                                                                                  |              |                           |           |        |  |  |
|                                                                                                                       | NUKITA      |                                                            | 2004/10/19               |                 |                                                                      |                                                                                                                                  |              |                           |           |        |  |  |
|                                                                                                                       | APPROVED BY |                                                            | DATE                     |                 |                                                                      |                                                                                                                                  |              |                           |           |        |  |  |
| NUKITA                                                                                                                |             | 2004/10/19                                                 | molex MOLEX INCORPORATED |                 |                                                                      |                                                                                                                                  |              |                           |           |        |  |  |
| ANGULAR                                                                                                               |             | ±3 °                                                       | MATERIAL NO.             |                 | DOCUMENT NO.                                                         |                                                                                                                                  |              |                           | SHEET NO. |        |  |  |
|                                                                                                                       |             |                                                            |                          | SEE TABLE       |                                                                      | SD-51281-011                                                                                                                     |              |                           |           | 1 OF 2 |  |  |
| G                                                                                                                     | REV         | DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS |                          | SIZE<br>A3      |                                                                      | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |              |                           |           |        |  |  |



適合FPC推奨寸法  
APPLICABLE FPC  
RECOMMENDED DIMENSION

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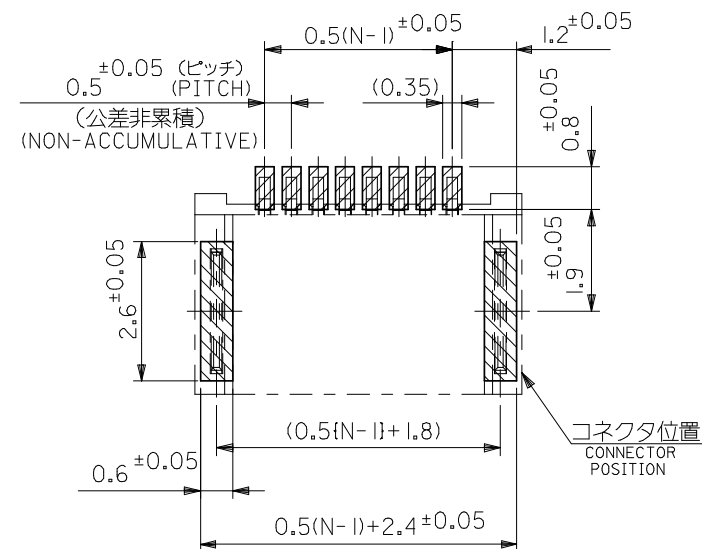
(仕上がり厚さ:  $0.3 \pm 0.03$ )  
(THICKNESS:  $0.3 \pm 0.03$ )



適合FFC推奨寸法  
APPLICABLE FFC  
RECOMMENDED DIMENSION

---

(仕上がり厚さ:  $0.3 \pm 0.03$ )  
(THICKNESS:  $0.3 \pm 0.03$ )



参考基板レイアウト図  
RECOMMENDED P.C.BOARD LAYOUT  
(マウント面)  
(MOUNTING SIDE)

注記 NOTES

### 1. 使用材料 MATERIAL

ハウジング : 液晶ポリマー ガラス充填 UL94V-0  
HOUSING : LIQUID CRYSTAL POLYMER (GLASS FILLED) UL94V-0  
ターミナル : リン青銅 (t=0.2), ニッケル下地  
コンタクト部: 金メッキ  
テール部: 鍍メッキ

TERMINAL : PHOSPHOR-BRONZE ,CONTACT : GOLD  
TAIL : TIN  
OVER NICKEL PLATING

金具 : リン青銅 (t=0.25), ニッケル下地 純錫メッキ  
FITTING NAIL : PHOSPHOR-BRONZE - PURE-TIN OVER NICKEL PLATING.

△ ソルダータール半田付け面のズレ量、及び金具半田付け面のズレ量は、基準面 [J] に対し、  
 上方向 0.1 MAXIMUM、下方向 0.15 MAXIMUM とする。  
 又、相互のバツキ量は 0.1 MAXIMUM とする。  
 MISALIGNMENT OF SOLDER TAILS AND FITTING NAILS FROM [J]  
 UPPER DIRECTION : 0.1 MAXIMUM , LOWER DIRECTION : 0.15 MAXIMUM.  
 OFFSET BETWEEN SOLDER TAILS AND FITTING NAILS : 0.1 MAXIMUM.

△ 偶数極に適用。

TO BE APPLIED ONLY WHEN ALL CIRCUIT ARE EVEN.

△ R0. 3は、FPCの導体部にかからないこと。  
R0.3 MUST NOT BE FRIAPPED TO PATTERN OF FPC.

5. FPC/FFCについて：

打抜き方向は導体側から補強板側を推奨いたします。

導体部については軟銅箔35 $\mu\text{m}$ または50 $\mu\text{m}$

メッキ厚 0.1  $\mu\text{m}$  金メッキ (電気メッキ)

を推奨いたします。

RECOMMENDED PUNCHER DIRECTION :

FROM CONDUCTOR SIDE TO STIFFENER BOARD SIDE.

RECOMMENDED CONDUCTOR SPEC :

THICKNESS OF SOFT COPPER FOIL : 35  $\mu\text{m}$  or 50  $\mu\text{m}$

GOLD PLATING : 0.1  $\mu\text{m}$  (ELECTRICAL PLATING)

6. 本製品は51281-\*\*20の鉛フリー品である。

THIS PRODUCT IS LEAD FREE OF 51281-\*\*-20.

7. ソルダータールの平坦度は、0.1 MAXIMUM とする。

SOLDER TAIL COPLANARITY IS 0.1 MAXIMUM.

|                  |                    |                                                            |                                          |                  |                            |                                                                                                                                  |              |                                                                                                          |                      |           |                                                                                                                 |
|------------------|--------------------|------------------------------------------------------------|------------------------------------------|------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------|----------------------|-----------|-----------------------------------------------------------------------------------------------------------------|
| REVISED          | EC NO.: J2008-4308 |                                                            | DRAWN:MABEI                              |                  | 2008/06/27                 | CHK'D:THARYAMA                                                                                                                   |              | 2008/06/30                                                                                               | APPR:NUKITA          |           | 2008/06/30                                                                                                      |
|                  | DESCRIPTION        |                                                            | GENERAL TOLERANCES<br>(UNLESS SPECIFIED) |                  | DIMENSION STYLE<br>MM ONLY |                                                                                                                                  | SCALE<br>--- |                                                                                                          | DESIGN UNITS         |           |  THIRD ANGLE<br>PROJECTION |
|                  |                    |                                                            |                                          |                  |                            |                                                                                                                                  |              |                                                                                                          | METRIC               |           |                                                                                                                 |
|                  |                    |                                                            |                                          |                  |                            |                                                                                                                                  |              |                                                                                                          | TITLE                |           |                                                                                                                 |
|                  |                    |                                                            |                                          |                  |                            |                                                                                                                                  |              |                                                                                                          | 0.5 FPC CONN NON-ZIF |           |                                                                                                                 |
|                  |                    |                                                            |                                          |                  |                            |                                                                                                                                  |              |                                                                                                          | HSG ASSY (HGT=1.2MM) |           |                                                                                                                 |
|                  |                    |                                                            |                                          |                  |                            |                                                                                                                                  |              |                                                                                                          | -LEAD FREE-          |           |                                                                                                                 |
| 10 UNDER         |                    | ± 0.2                                                      |                                          | DRAWN BY DATE    |                            | KENSUZUKI 2004/10/19                                                                                                             |              |                                                                                                          |                      |           |                                                                                                                 |
| 10 OVER 30 UNDER |                    | ± 0.25                                                     |                                          | CHECKED BY DATE  |                            | NUKITA 2004/10/19                                                                                                                |              |                                                                                                          |                      |           |                                                                                                                 |
| 30 OVER          |                    | ± 0.3                                                      |                                          | APPROVED BY DATE |                            | NUKITA 2004/10/19                                                                                                                |              |  MOLEX INCORPORATED |                      |           |                                                                                                                 |
| ANGULAR ±3 °     |                    | DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS |                                          | MATERIAL NO.     |                            | DOCUMENT NO.                                                                                                                     |              |                                                                                                          |                      | SHEET NO. |                                                                                                                 |
| SEE SHEET 1      |                    |                                                            |                                          | SD-51281-011     |                            |                                                                                                                                  |              | 2 OF 2                                                                                                   |                      |           |                                                                                                                 |
| G                |                    | REV                                                        |                                          | SIZE             |                            | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |              |                                                                                                          |                      |           |                                                                                                                 |
|                  |                    |                                                            |                                          | A3               |                            |                                                                                                                                  |              |                                                                                                          |                      |           |                                                                                                                 |

10 9 8 7 6 5 4 3 2 1

F

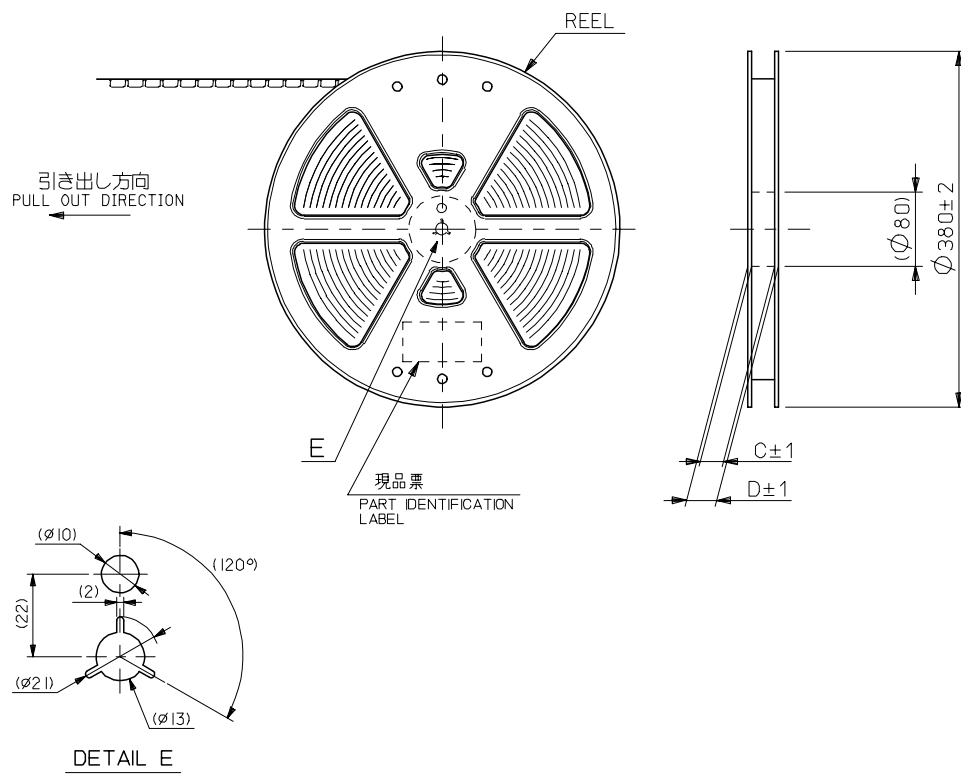
E

D

C

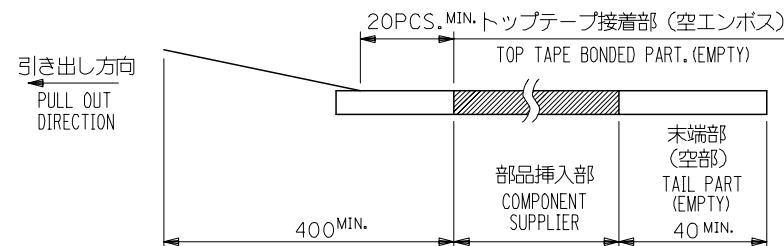
B

A



### NOTES

- 製品詳細寸法については図面 SD-51281-011 を参照下さい。  
RE DETAILED DIMENSION, SEE SD-51281-011
- 梱包数量：3000個/リール  
NUMBER OF CONNECTORS : 3000PCS/REEL
- リードテープ長さ LEAD TAPE LENGTH



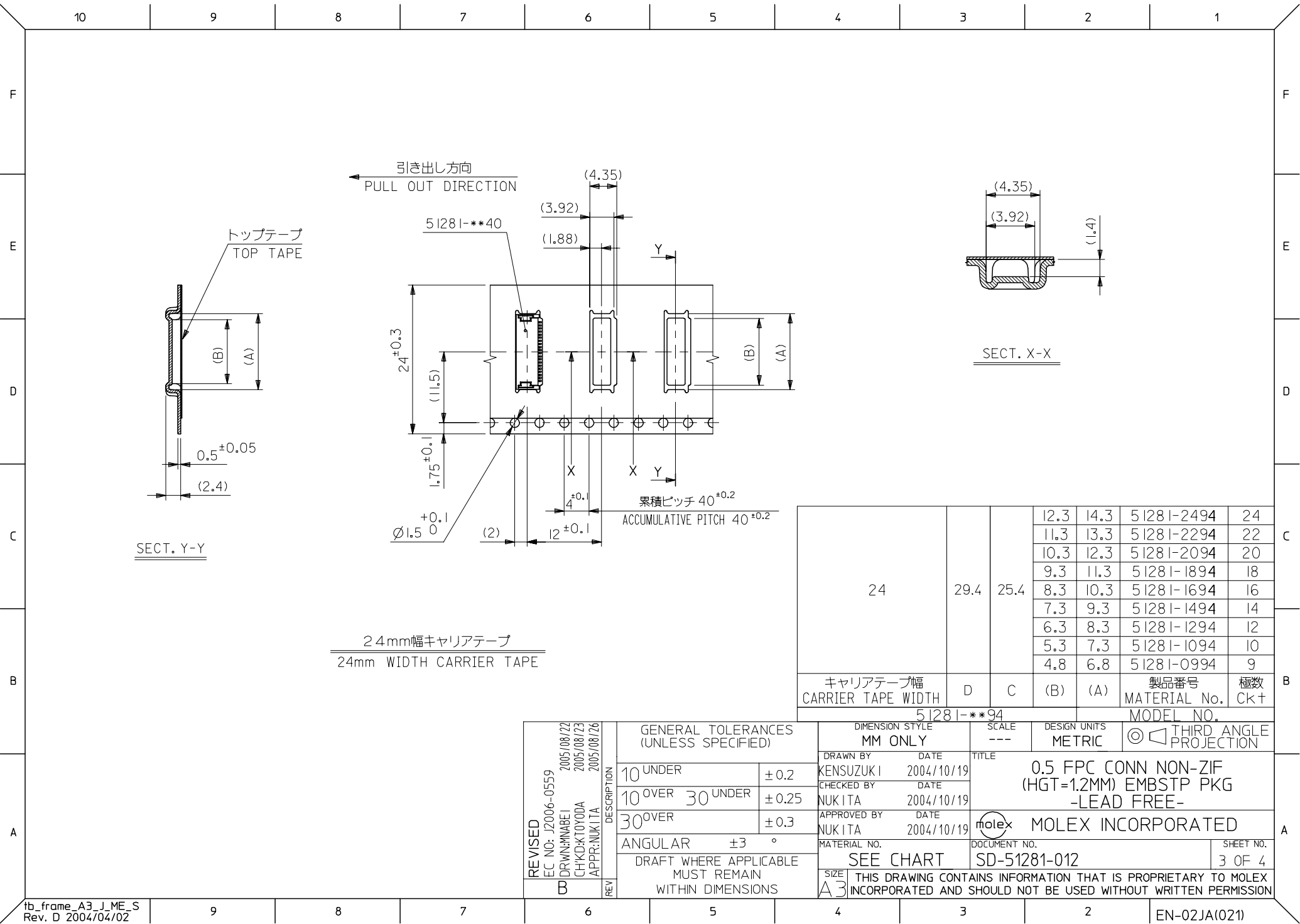
- トップテープの剥離強度：0.1N~1.3N {10gf~130gf}  
(剥離方向は下図参照)  
尚、本規格値は出荷時に適用。(但し、輸送時に剥離が発生しないこと。)  
PEELING OFF FORCE OF TOP TAPE : 0.1N~1.3N {10gf~130gf}  
(PEELING DIRECTION AS SHOWN IN FOLLOWING FIG.)  
THIS REQUIREMENT SHOULD BE APPLIED AT SHIPMENT.  
PEEL OFF SHOULD NOT BE ALLOWED , DURING TRANSPORTATION.

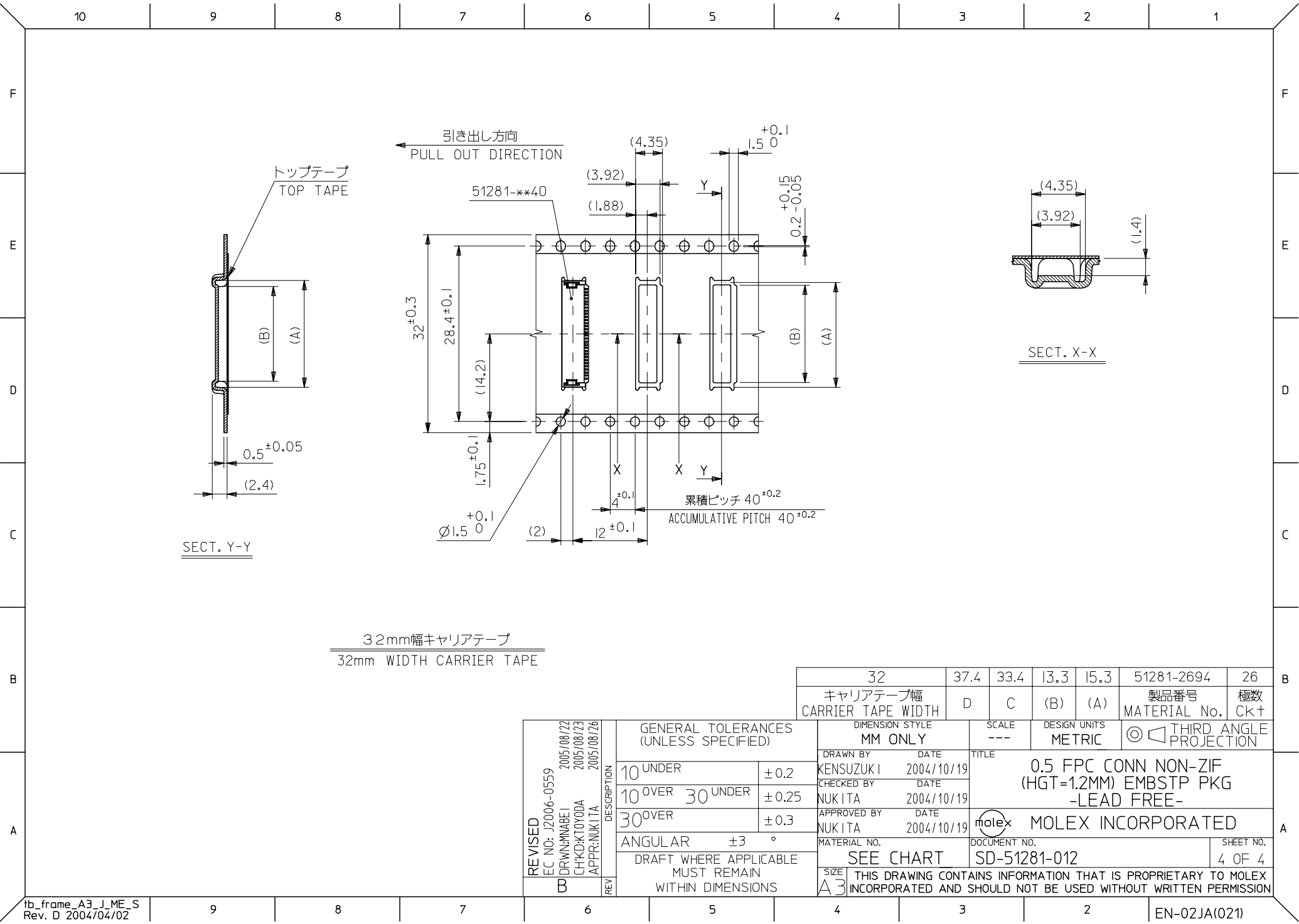


- 材料 (MATERIAL)  
キャリアテープ (CARRIER TAPE) : ポリプロピレン (POLYPROPYLENE)  
トップテープ (TOPTAPE) : PET , PE , PEF  
リール (REEL) : ポリスチレン (PS) <リサイクル材含む>  
POLYSTYREN (PS) <RECYCLE MATERIAL CONTAINED>
- C, D 寸法は SHEET 2 ~ 3 を参照下さい。  
SEE SHEET 2 ~ 3 (DIMENSION C, D ).

|                                                                             |             |                                                            |       |                            |                                                                                                                                  |                                                                        |                        |                           |  |  |
|-----------------------------------------------------------------------------|-------------|------------------------------------------------------------|-------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------|---------------------------|--|--|
| REVISED<br>EC NO: J2006-0559<br>DRWN: NABEI<br>CHKD: TOYODA<br>APPR: NUKITA | DESCRIPTION | GENERAL TOLERANCES<br>(UNLESS SPECIFIED)                   |       | DIMENSION STYLE<br>MM ONLY |                                                                                                                                  | SCALE<br>---                                                           | DESIGN UNITS<br>METRIC | THIRD ANGLE<br>PROJECTION |  |  |
|                                                                             |             | 10 UNDER                                                   | ±0.2  | DRAWN BY<br>KENSUZUKI      | DATE<br>2004/10/19                                                                                                               | TITLE<br>0.5 FPC CONN NON-ZIF<br>(HGT=1.2MM) EMBSTP PKG<br>-LEAD FREE- |                        |                           |  |  |
|                                                                             |             | 10 OVER 30 UNDER                                           | ±0.25 | CHECKED BY<br>NUKITA       | DATE<br>2004/10/19                                                                                                               |                                                                        |                        |                           |  |  |
|                                                                             |             | 30 OVER                                                    | ±0.3  | APPROVED BY<br>NUKITA      | DATE<br>2004/10/19                                                                                                               | MOLEX INCORPORATED                                                     |                        |                           |  |  |
|                                                                             |             | ANGULAR ±3 °                                               |       | MATERIAL NO.               |                                                                                                                                  | DOCUMENT NO.                                                           |                        | SHEET NO.                 |  |  |
|                                                                             |             | DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS |       | SEE CHART                  |                                                                                                                                  | SD-51281-012                                                           |                        | 1 OF 4                    |  |  |
|                                                                             | REV         |                                                            |       | SIZE<br>A3                 | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |                                                                        |                        |                           |  |  |







SECT. Y-Y

SECT. X-X

32mm幅キャリアテープ  
32mm WIDTH CARRIER TAPE

|                                |  |                                                                                                                               |      |                                                                        |      |                           |           |
|--------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------|------|------------------------------------------------------------------------|------|---------------------------|-----------|
| 32                             |  | 37.4                                                                                                                          | 33.4 | 13.3                                                                   | 15.3 | 51281-2694                | 26        |
| キャリアテープ幅<br>CARRIER TAPE WIDTH |  | D                                                                                                                             | C    | (B)                                                                    | (A)  | 製品番号<br>MATERIAL No.      | 極数<br>CK+ |
| DIMENSION STYLE<br>MM ONLY     |  | SCALE<br>---                                                                                                                  |      | DESIGN UNITS<br>METRIC                                                 |      | THIRD ANGLE<br>PROJECTION |           |
| DRAWN BY<br>KENSUZUKI          |  | DATE<br>2004/10/19                                                                                                            |      | TITLE<br>0.5 FPC CONN NON-ZIF<br>(HGT=1.2MM) EMBSTP PKG<br>-LEAD FREE- |      |                           |           |
| CHECKED BY<br>NUKITA           |  | DATE<br>2004/10/19                                                                                                            |      |                                                                        |      |                           |           |
| APPROVED BY<br>NUKITA          |  | DATE<br>2004/10/19                                                                                                            |      | MOLEX INCORPORATED                                                     |      |                           |           |
| MATERIAL NO.                   |  | DOCUMENT NO.                                                                                                                  |      |                                                                        |      |                           | SHEET NO. |
| SEE CHART                      |  | SD-51281-012                                                                                                                  |      |                                                                        |      |                           | 4 OF 4    |
| SIZE<br>A3                     |  | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |      |                                                                        |      |                           |           |